REMARKS

The above amendments to the above-captioned application along with the following remarks are being submitted as a response to the Official Action dated July 30, 2007 and the telephone interview with the Examiner on November 28, 2007. Applicants thank the examiner for taking the time to conduct the telephone interview.

The Examiner indicted that the proposed claim amenments appear to overcome the pending 112 rejections without triggering the previously raised prior art rejections. However, they will be further reviewed by her supervisor. In addition, she has to formally review the newly introduced languages to see if they trigger any new 112 rejections.

In view of the above amendments and the following remarks, the Examiner is respectfully requested to give due reconsideration to this application, to indicate the allowability of the claims, and to pass this case to issue.

Status of the Claims

Claims 1, 3-4 and 6-8 are under consideration in this application. Claims 1, 3-4 and 6-8 are being amended, as set forth in the above marked-up presentation of the claim amendments, in order to more particularly define and distinctly claim applicants' invention.

The claims are being amended to correct formal errors and/or to better recite or describe the features of the present invention as claimed. All the amendments to the claims are supported by the specification. Applicants hereby submit that no new matter is being introduced into the application through the submission of this response.

Formality Rejections

The Examiner objected to claims 7-8 for depending from the cancelled claim 2, and thus did not consider the merits of claims 7-8. The Examiner rejected claims 1, 3-4 and 6 under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement. The Examiner rejected claims 1, 3-4 and 6 under 35 U.S.C. §112, second paragraph, as being indefinite.

Regarding the support in the specification for "consisting of" (p. 3, Paragraph No. 3 and p. 6, Paragraphs No. 16-17 of the outstanding Office action), Applicants respectfully contend that it is apparent to one skilled in the art that the invention can be implemented with just the steps recited in claim 1. In particular, "w*hile the invention has been described by way of an example thereof, the example is illustrative and not restrictive and it will be understood by those skilled in the art that various changes and modifications may be made in the*

invention *without departing from the scope of the appended claims* (p. 9, 2nd to last paragraph)." In addition, the dependant claim are being amended to not to recite any additional steps. Claim 3 now merely recites repeating one of the steps, but not adding any new steps.

Regarding the Examiner's assertion that claims 1 and 3 lack active steps in active voice (p. 5, Paragraph No. 9 of the outstanding Office action), Applicants respectfully request the Examiner to explain whey the existing steps of: a first text document data file extraction step for *extracting*, an identifier extraction step for *extracting*, a second text document data file extraction step for *extracting*, an appearance frequency calculation step for sequentially *reading* …and for *calculating* a frequency of appearance, and a displaying step for *displaying*, do NOT constitute active steps in active voice.

Regarding the Examiner's assertion that the keyword table should not be given patentable weight (p. 5, Paragraph No. 9 of the outstanding Office Action), Applicants respectfully contend that claim 1 now renames the keyword table as a category table 110 with a tree structure in which keywords 503 are stored and classified into said categories 501/502 organized as at least one level including a lower level 502, and such a tree stricture is used to display "each of said keywords 503 side-by-side with the calculated frequency of appearance of each of said keywords, and each of said categories 501/502 side-by-side with the calculated frequency of appearance of each of said categories in a keyword frequency table corresponding to positions in said category table 110. As such, the category table 110 with the tree structure recited in the wherein stance DOES carry patentable weight via the displaying step.

Regarding the Examiner's question that whether "to determine whether to select or change a research course" constitutes an intended use of an active step of determining (p. 6, Paragraph No. 14 of the outstanding Office Action), Applicants respectfully contend that the recitation is being amended into "for the user to determine whether to select or change a research course of said base sequence or said amino acid sequence of a gene or protein of interest inputted by the user" to indicate the function of the invention. "*The user can thus learn the frequency of each keyword related to the sequence AGCT in the text data 108 in the second file system 107* (p. 6, 2nd paragraph)," so as to find out the functions or characteristics of the particular gene or protein (p. 1, lines 18-19; P. 3, 2nd paragraph). In addition, by viewing the keyword frequency table in Fig. 7, the researcher can know how much literature exists on the subject to know whether the subject has already been researched or studied enough so as to determine whether to select or change the research's course.

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In particular, claims 1 & 7 are notated as follows to show all the newly introduced claim languages are fully supported by the specification.

A method of calculating the frequency of appearance of a keyword (Fig. 8), as now recited in claim 1, using a first database in which information about a base sequence or an amino acid sequence is stored and a second database in which text document data is stored (for example, per file; Figs. 2-3 show the structure of first and second text document data files, and "*each file of text data 106 contains identifier 202 for identifying document data*" p. 5, last paragraph), said method consisting of: a first text document data file extraction step (Steps 803+) for extracting from said first database 105 (Fig. 2) a first text document data file 106 (for example, "*a thesis describing the result of research into a particular base sequence*" p. 4, last paragraph) which contains a base sequence or an amino acid sequence of a gene or protein of interest (e.g., "AGCT" p. 5, 2nd to last paragraph, 201 in Fig. 2, or 401 in Fig. 4) inputted by a user; an identifier extraction step (Steps 806+) for extracting an identifier 202 (e.g., PMID: P00005, Fig. 1; p. 4, last line; PubMed Identifier is a unique number assigned to each PubMed citation of life sciences and biomedical scientific journal articles) identifying text document data in said first text document data file 106 from said extracted first text document data file; a second text document data file extraction step (Step 807) for extracting a second text document data file 108 (for example, "*the data describes the result of molecular-biological study into a gene or protein*" p. 5, 1st paragraph) from said second database 107 (Fig. 3) which contains said extracted identifier 301 (same as 202, e.g., PMID: P00005); an appearance frequency calculation step (Step 810) for sequentially reading keywords 503 (e.g., "*axon midline choice point recognition*" etc. listed in the last column of the table in Fig. 5; "*the frequency of appearance in document data*" p. 10, line 4) from a category table 110 (Fig. 5; "*The calculating unit 102 obtains keywords contained in the category table 110 in the third file system 109*" p. 6, lines 3-4) which contains categories 501, 502 and said keywords 503 of known functions or characteristics of genes or proteins, and for calculating a frequency of appearance of each of said keywords 503 (e.g., 2-1193 in Fig. 6) by automatically and mechanically counting a number of extracted second text document data files that contain said each keyword therein ("*Specifically, the number of files of extracted text data 108 in which each keyword appears or is used is calculated.*" p. 6, lines 5-6) and calculating a frequency of appearance of each of said categories 501, 502 thereby generating a frequency calculation result table Fig. 6 of a structure mirroring the tree structure, said frequency calculation result table Fig. 6 containing the frequency of appearance of each of the keywords, and a frequency of appearance of each category of the lower level 502 which is

a sum of frequencies of appearance of keywords belonging to said each category of the lower level 502 ("keyword "motor axon guidance" belongs to a lower-level category "axon guidance"" p. 5, 3rd paragraph; *The frequency of each lower-level category in the lower-category portion 502 is the sum of the frequencies of the keywords that belong to that lower-level category.*" P. 6, 5th paragraph); and a displaying step for displaying each of said keywords 503 side-by-side with the calculated frequency of appearance of each of said keywords, and each of said categories 501/502 side-by-side with the calculated frequency of appearance of each of said categories in a keyword frequency table (Fig. 7) corresponding to positions in said category table 110 thereby showing numbers of second text document data files including said keywords for the user to determine whether to select or change a research course of said base sequence or said amino acid sequence of a gene or protein of interest inputted by the user (p. 3, lines 8-16). Wherein each of said keywords 503 includes one or more words (keyword "motor axon guidance" p. 5, 3rd paragraph), and said category table 110 has a tree structure in which keywords 503 are stored and classified into said categories 501/502 organized as at least one level in said category table 110, said at least one level includes a lower level 502.

As recited in claim 7, a frequency of appearance of each category of a upper-lever in the ~~keyword~~ category table is [[the]] a sum of frequencies of appearance of lower-level categories belonging to the upper-lever category ("*The frequency of each category in the category portion 501 is the sum of the frequencies of the lower-level categories belonging to that category.*" p. 6, 5th paragraph; "*In the illustrated example, the frequency of appearance of all of the keywords belonging to the category "cell recognition" is 196. This indicates that keywords belonging to the category "cell recognition" appear at least once in 196 files of the text data contained in the second file system 107.*" p. 6, last paragraph; "*lower-level categories "axon guidance" and "axon extension" belong to an upper-level category "cell recognition"*" p. 5, 3rd paragraph).

As the claims are being amended as required by the Examiner and filly supported by the specification, the withdrawal of the outstanding informality rejection is in order, and is therefore respectfully solicited.
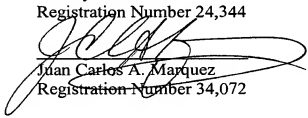

Conclusion

In view of all the above, clear and distinct differences as discussed exist between the present invention as now claimed and the prior art reference upon which the rejections in the Office Action rely, Applicants respectfully contend that the prior art references cannot

anticipate the present invention or render the present invention obvious. Rather, the present invention as a whole is distinguishable, and thereby allowable over the prior art.

Favorable reconsideration of this application is respectfully solicited. Should there be any outstanding issues requiring discussion that would further the prosecution and allowance of the above-captioned application, the Examiner is invited to contact the Applicants' undersigned representative at the address and telephone number indicated below.

Respectfully submitted,

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